

# PATENT COOPERATION TREATY

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### INTERNATIONAL PRELIMINARY EXAMINATION REPORT



(PCT Article 36 and Rule 70)

Applicant's or agent's file reference KJLCT/P5025A	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/01019	International filing date (day/month/year) 10.03.2003	Priority date (day/month/year) 26.03.2002
International Patent Classification (IPC) or both national classification and IPC B65D19/00		
Applicant MULCAHY, Stephen et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
  - ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:
  - I ☒ Basis of the opinion
  - II ☐ Priority
  - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV ☐ Lack of unity of invention
  - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI ☐ Certain documents cited
  - VII ☐ Certain defects in the international application
  - VIII ☐ Certain observations on the international application

Date of submission of the demand  24.10.2003	Date of completion of this report  03.02.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Lendfers, P  Telephone No. +49 89 2399-2933  

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/01019

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-15 as originally filed

**Claims, Numbers**

1-25 received on 31.10.2003 with letter of 24.10.2003

**Drawings, Sheets**

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/01019

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-25
	No: Claims	
Inventive step (IS)	Yes: Claims	1-25
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-25
	No: Claims	

2. Citations and explanations

**see separate sheet**

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB03/01019

The invention relates to a corrugated cardboard pallet comprising a top sheet, a base sheet and at least one connecting member between said top and base sheets, the connecting member being moveable to shift the pallet between a relatively flat and a relatively erect form.

The closest prior art document appears to be document US-A-3 115 105. This document discloses a foldable pallet comprising a sheet and a multiplicity of support stations.

According to the invention each connecting member comprises two substantially parallel opposing main body panels and two pairs of opposing side walls wherein each of one pair of opposing side walls is formed from at least two interlockable parts to enable each member to be moveable from a flattened or collapsed state to an erect state.

The container described in document WO-A-82/00987 can be stored in a collapsed condition, but is not suitable to be used for the construction of a collapsible pallet. The combination of the features of independent claim 1 is neither known from, nor rendered obvious by, the available prior art. Therefore, the subject-matter of independent claim 1 is new and inventive. Consequently, the subject-matter of dependent claims 2 to 21 and method-claims 22 to 25 fulfils as well the requirements of novelty and inventive step (Articles 33(2) and 33(3) PCT). Furthermore, claims 1 to 25 are considered as susceptible of industrial application.

## CLAIMS

1. A corrugated cardboard pallet comprising a top sheet (28), a base sheet (29) and at least one connecting member (30-38) between said top and base sheets, the connecting member being moveable to shift the pallet between a relatively flat and a relatively erect form characterised in that each connecting member comprises two substantially parallel opposing main body panels (18,20) and two pairs of opposing side walls (X, Y) wherein each of one pair of opposing side walls is formed from at least two interlockable parts (11, 14, 22, 25) to enable each member to be moveable from a flattened or collapsed state to an erect state.
2. A corrugated cardboard pallet as claimed in claim 1 wherein each support (10) is constructed from a blank (2) comprising two main body forming panels (18, 20), a middle panel (19) between said body forming panels and at least one end flap (21), each main body forming panel and middle panel having opposing side flaps (11, 22, 14, 25, 13, 24), each side flap of the main body panels being provided with an indent (I).
3. A corrugated cardboard pallet as claimed in claim 2 wherein the side flaps (11, 22, 14, 25) of the main body panels are secured to the side flaps (13, 24) of the middle panel, the end flap (21) is folded over the secured to the main panel and the side flaps of the main body panels are not secured to each other.
4. A corrugated cardboard pallet as claimed in claim 2 or claim 3 wherein opposing side flaps (11 and 22, 14 and 25) of each main body panel are a mirror image of one another.

5. A corrugated cardboard pallet as claimed in claim 2, 3 or 4 wherein adjacent side flaps (11 and 14, 22 and 25) of adjacent main body panels are identical.
6. A corrugated cardboard pallet as claimed in any one of claims 2 to 5 wherein an end flap (17, 21) is provided at the end of each main body forming panel.
7. A corrugated cardboard pallet as claimed in claim 6 wherein one of the end flaps (21) is provided with side flaps (16, 27).
8. A corrugated cardboard pallet as claimed in claim 7 wherein a tab (12, 15, 23, 26) is provided on each of the side flaps (11, 14, 22, 25) of the main body forming panels for attachment to side flaps of the end flap and the middle flap in the constructed support.
9. A corrugated cardboard pallet as claimed in claim 8 wherein each tab is provided at the remote end of the indented region of each side flap.
10. A corrugated cardboard pallet as claimed in any one of claims 2 to 9 wherein fluting is formed in the longitudinal direction of the blank.
11. A corrugated cardboard panel as claimed in any one of claims 6 to 10 wherein an end flap of each main body forming panel is substantially the same length as the middle panel.
12. A corrugated cardboard pallet as claimed in any one of the preceding claims wherein at least 4 connecting members are provided between the top sheet (28) and the base sheet (29).
13. A corrugated cardboard pallet as claimed in claim 12 wherein between 9 and 12 members are provided between the top sheet (28) and the base sheet (29).
14. A corrugated cardboard pallet as claimed in claim 13 wherein the connecting members are arranged at each corner of the sheets, with at least one member

positioned centrally between the corner members along each side thereof and a further member being provided in the centre between the sheets.

15. A corrugated cardboard pallet as claimed in claim 14 wherein the central connecting member is the largest size of member and the members provided at the corners are the smallest in size.

16. A corrugated cardboard pallet as claimed in any one of the preceding claims wherein the base sheet is provided with regions (40, 42) that are relieved of material to provide access points from below the pallet.

17. A corrugated cardboard pallet as claimed in any one of the preceding claims wherein the base sheet (29), top sheet (28) and at least one connecting member (30-38) are all secured together by means of adhesive only.

18. A corrugated cardboard pallet as claimed in any one of the preceding claims wherein a varnish is applied to the top sheet, base sheet and/or at least one connecting member.

19. A corrugated cardboard pallet as claimed in any one of the preceding claims wherein at least one additional sheet is secured to the top and/or base sheet.

20. A corrugated cardboard pallet as claimed in claim 19 wherein the additional sheet is a cross ply board.

21. A corrugated cardboard pallet as claimed in claim 19 or 20 wherein fluting of the additional sheet lies at 90 degrees to the direction of fluting on the sheet to which it is applied.

22. A method of manufacturing a corrugated cardboard pallet comprising the steps of passing a top sheet (28) along a conveyor (100), feeding at least one connecting member (10) on to the top sheet and securing a base sheet (29) to the connecting

member, characterised in that the connecting member is moveable between a flattened and an erect state and is applied to the top sheet in its flattened state.

23. A method as claimed in claim 22 wherein adhesive is applied to the connecting member prior to feeding it on to the top sheet.

24. A method as claimed in claim 23, 24 or claim 25 wherein a plurality of connecting members are fed onto different locations on the top sheet.

25. A method as claimed in claim 24 wherein the connecting members are fed from hoppers (101-104).